

ABSTRACT

There are provided an apparatus for fine pattern formation, which can form a fine pattern with high accuracy by direct writing with ink, a production process of fine nozzles provided in the apparatus for fine pattern formation, and a method for fine pattern formation. Fine pattern formation with high accuracy could have been realized by the apparatus for fine pattern formation, comprising: a silicon substrate; a plurality of fine holes which extend through the silicon substrate from the surface of the silicon substrate to the back surface of the silicon substrate and have a silicon oxide layer on the wall surface thereof; fine nozzles which are protruded, integrally with the silicon oxide layer, on the back surface side of the silicon substrate from each opening of the fine holes; a silicon nitride layer provided on the surface and side of the silicon substrate; a support member provided on the surface side of the silicon substrate; an ink passage for supplying ink to the opening of each fine hole on the surface side of the silicon substrate; and an ink supplying device connected to the ink passage.